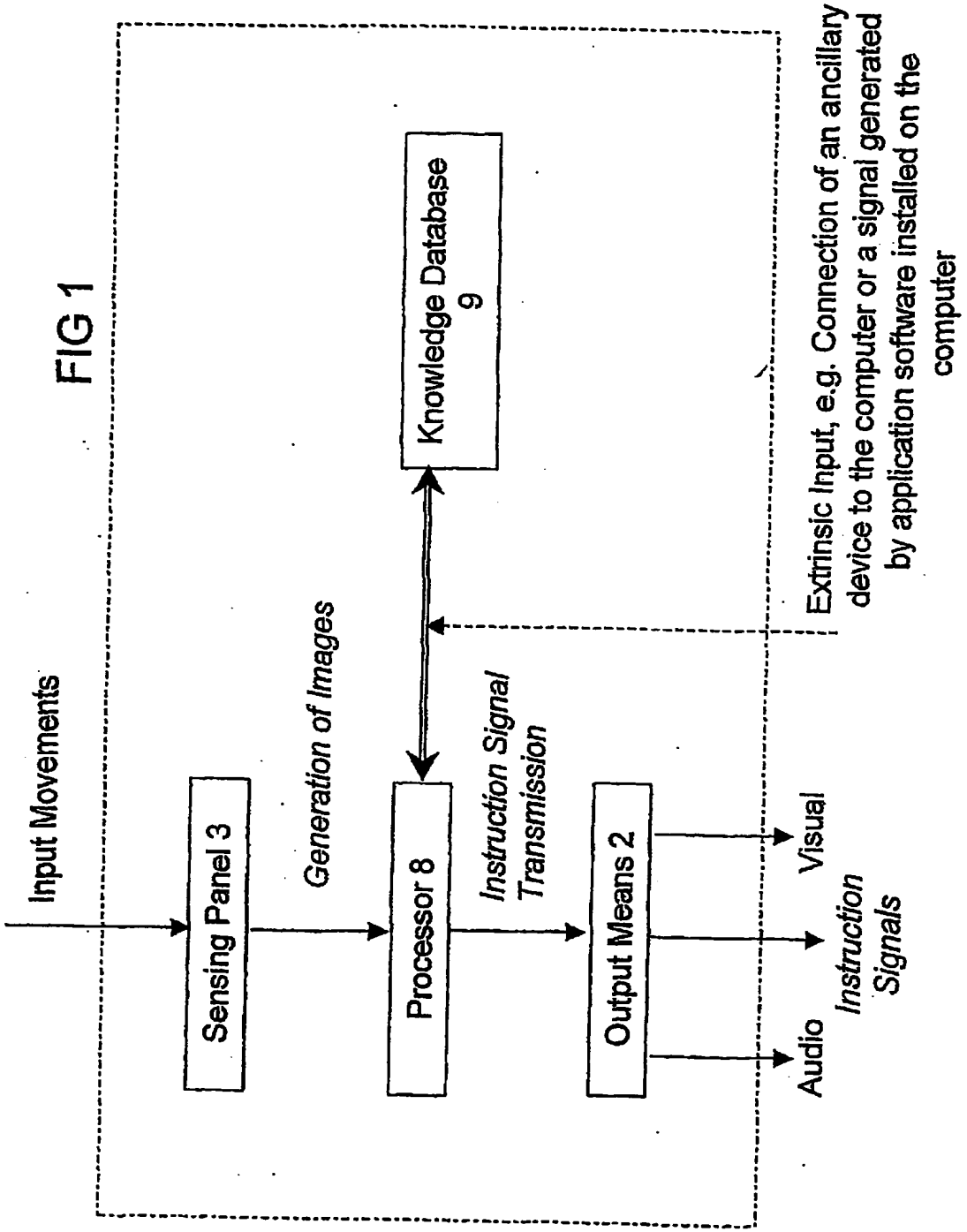
FIG 1


Input Movements
Sensing Panel 3
Generation of Images
Processor 8
Knowledge Database 9
Instruction Signal Transmission
Output Means 2
Visual
Audio
Instruction Signals
Extrinsic Input, e.g. Connection of an ancillary device to the computer or a signal generated by application software installed on the computer

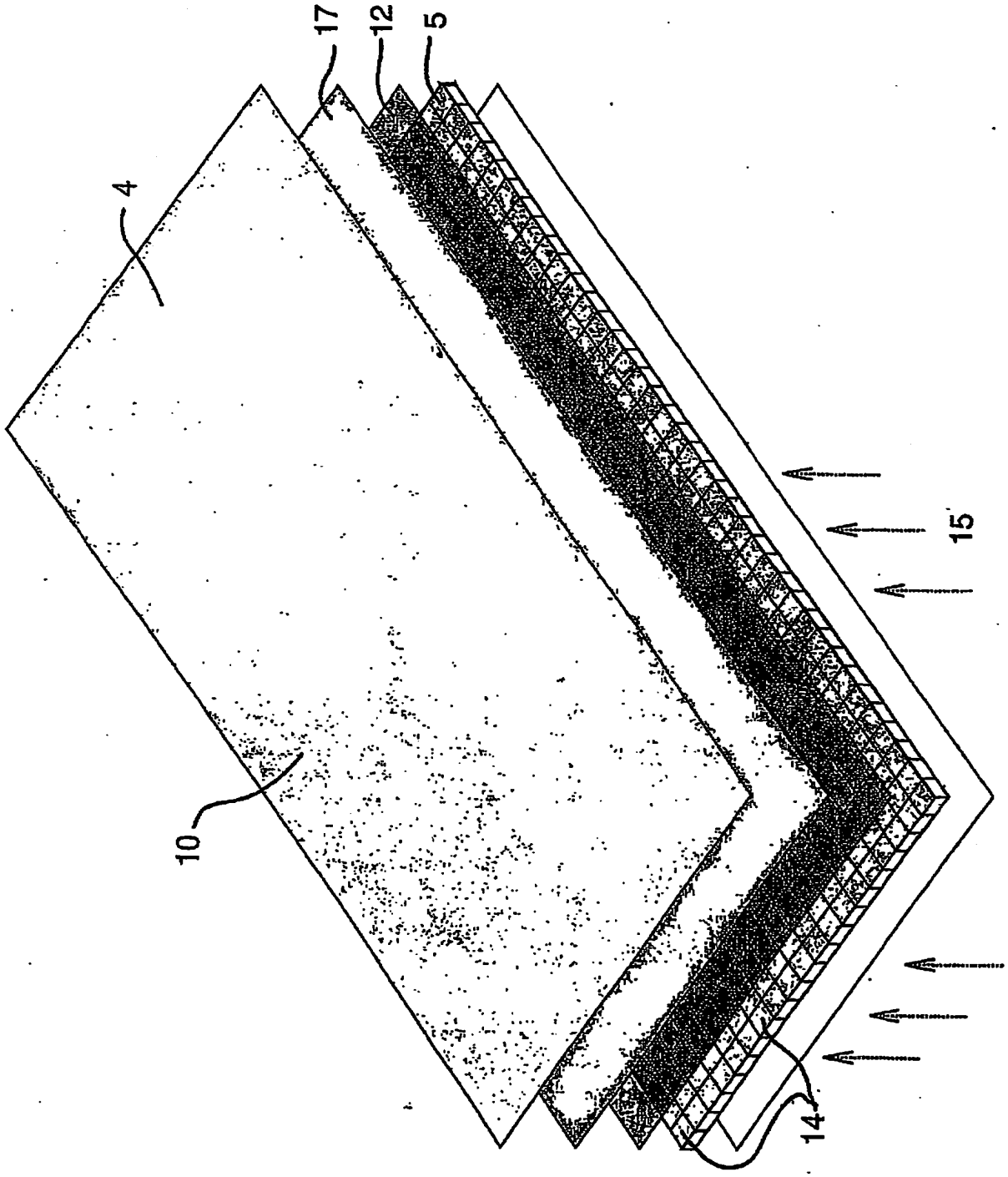
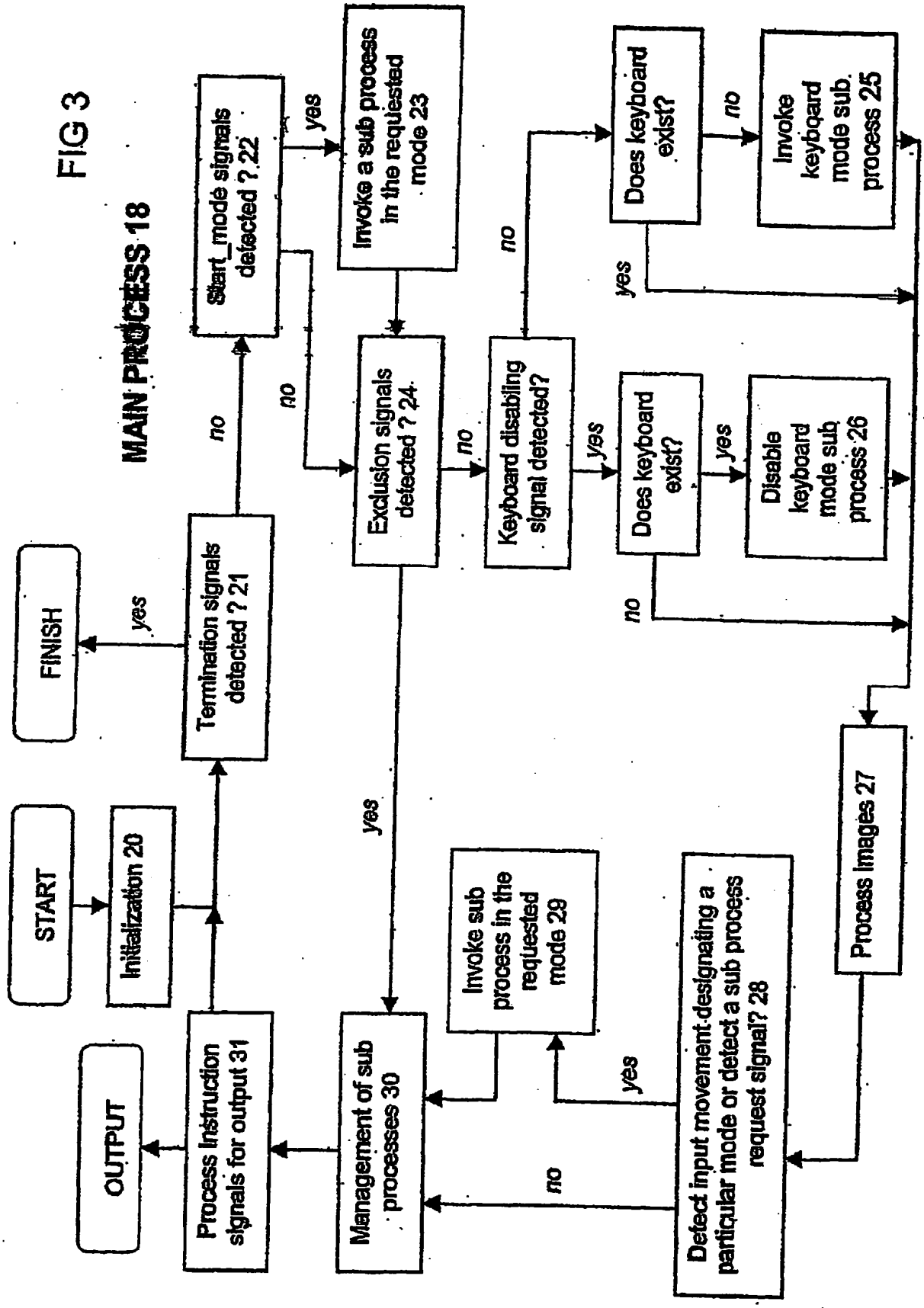

17
12
5
4
15
10
14

FIG 3


MAIN PROCESS 18
START
Initialization 20
Termination signals detected ? 21
yes
FINISH
no
Start_mode signals detected ? 22
yes
Invoke a sub process in the requested mode 23
no
Exclusion signals detected ? 24
no
Keyboard disabling signal detected?
yes
Does keyboard exist?
yes
Disable keyboard mode sub process 26
no
Does keyboard exist?
no
Invoke keyboard mode sub. process 25
yes
Process images 27
Detect input movement designating a particular mode or detect a sub process request signal? 28
yes
Invoke sub process in the requested mode 29
no
Management of sub processes 30
Process instruction signals for output 31
OUTPUT
yes

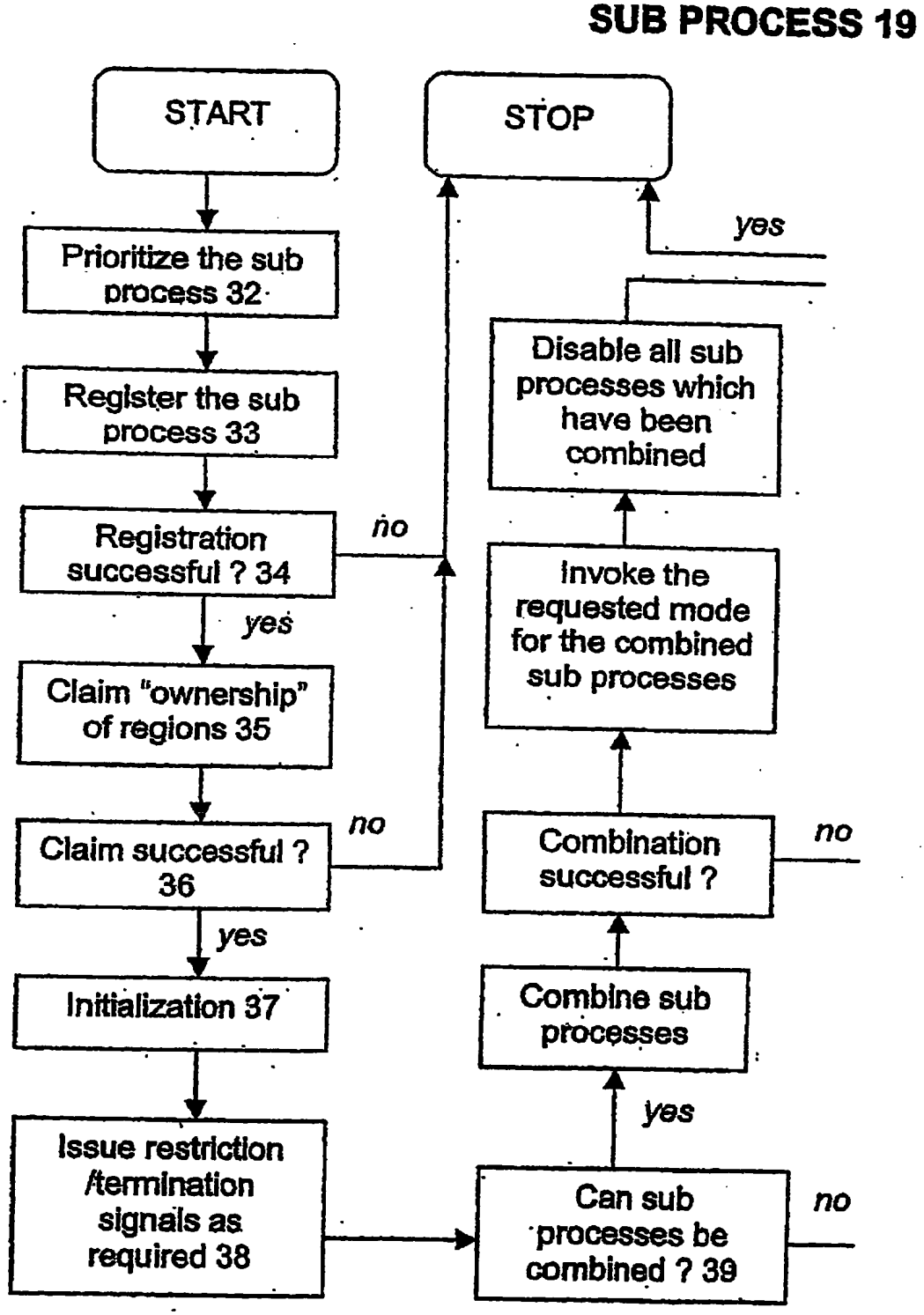

SUB PROCESS 19
START
Prioritize the sub process 32
Register the sub process 33
Registration successful ? 34
no
yes
Claim "ownership" of regions 35
Claim successful ? 36
no
yes
Initialization 37
Issue restriction /termination signals as required 38
STOP
yes
Disable all sub processes which have been combined
Invoke the requested mode for the combined sub processes
Combination successful ?
no
Combine sub processes
yes
Can sub processes be combined ? 39
no

FIG 4

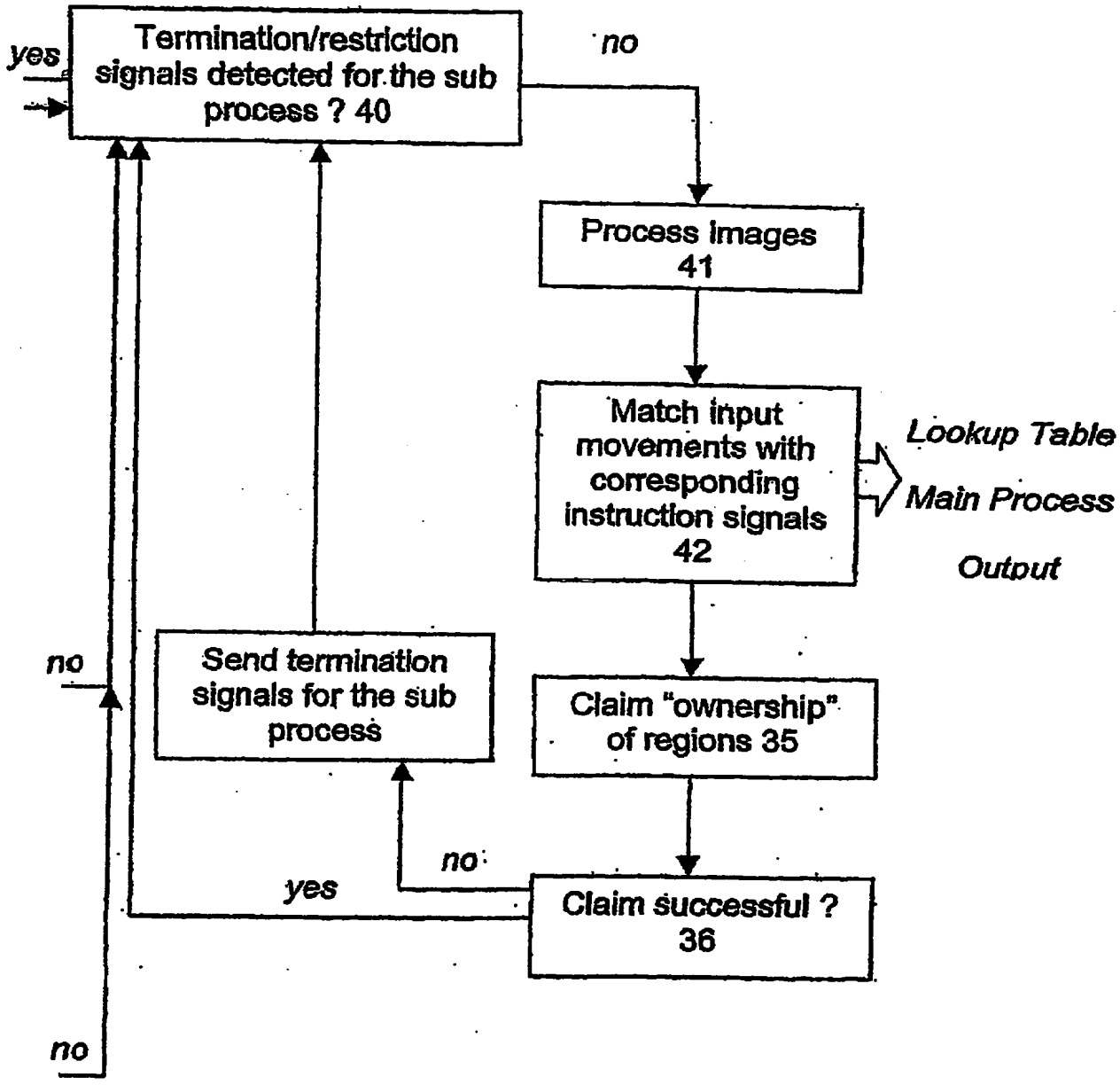

Termination/restriction signals detected for the sub process ? 40
yes
no
Process images 41
Match input movements with corresponding instruction signals 42
Lookup Table
Main Process
Output
Claim "ownership" of regions 35
Claim successful ? 36
no
yes
Send termination signals for the sub process
no
no

FIG 4 (cont)

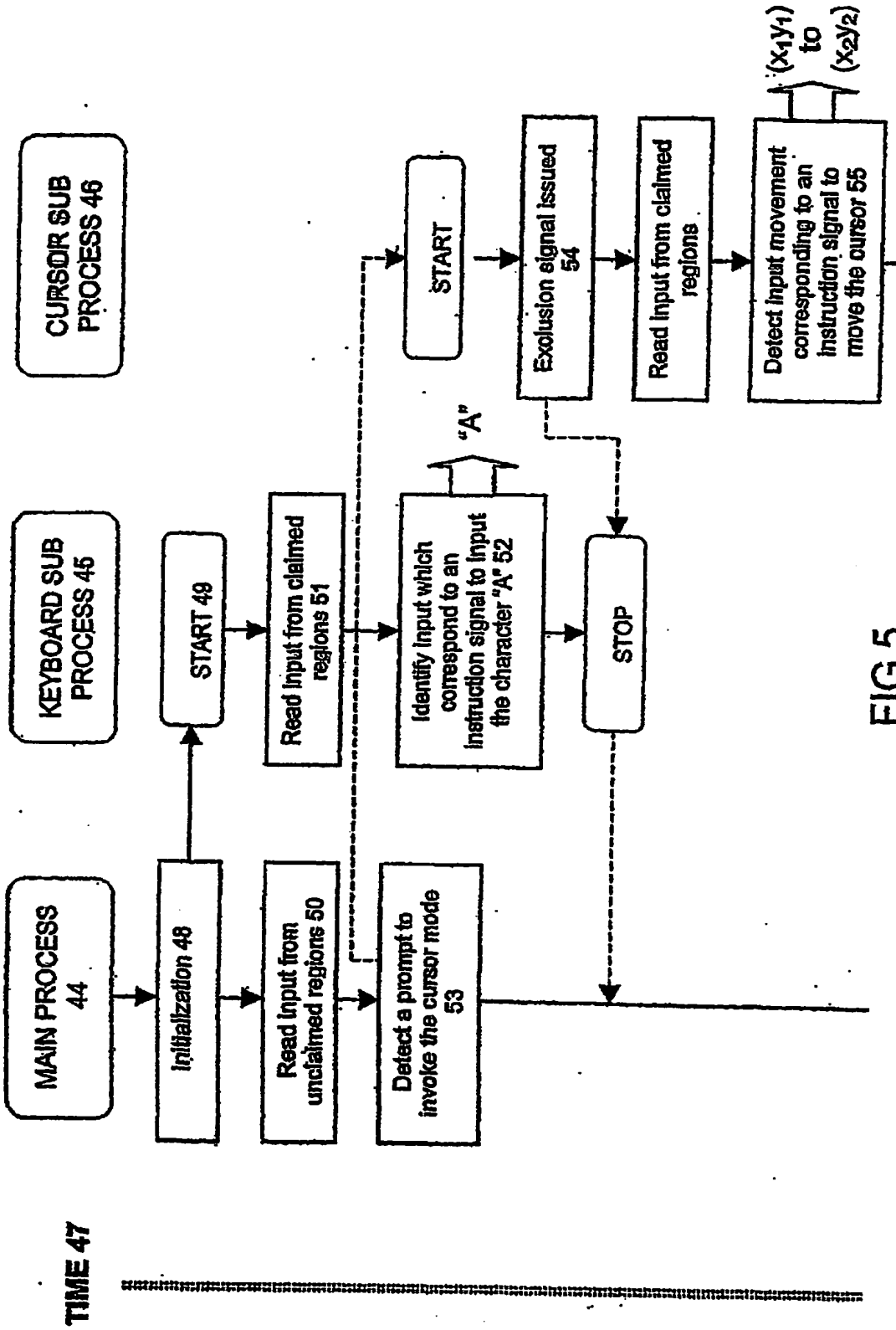
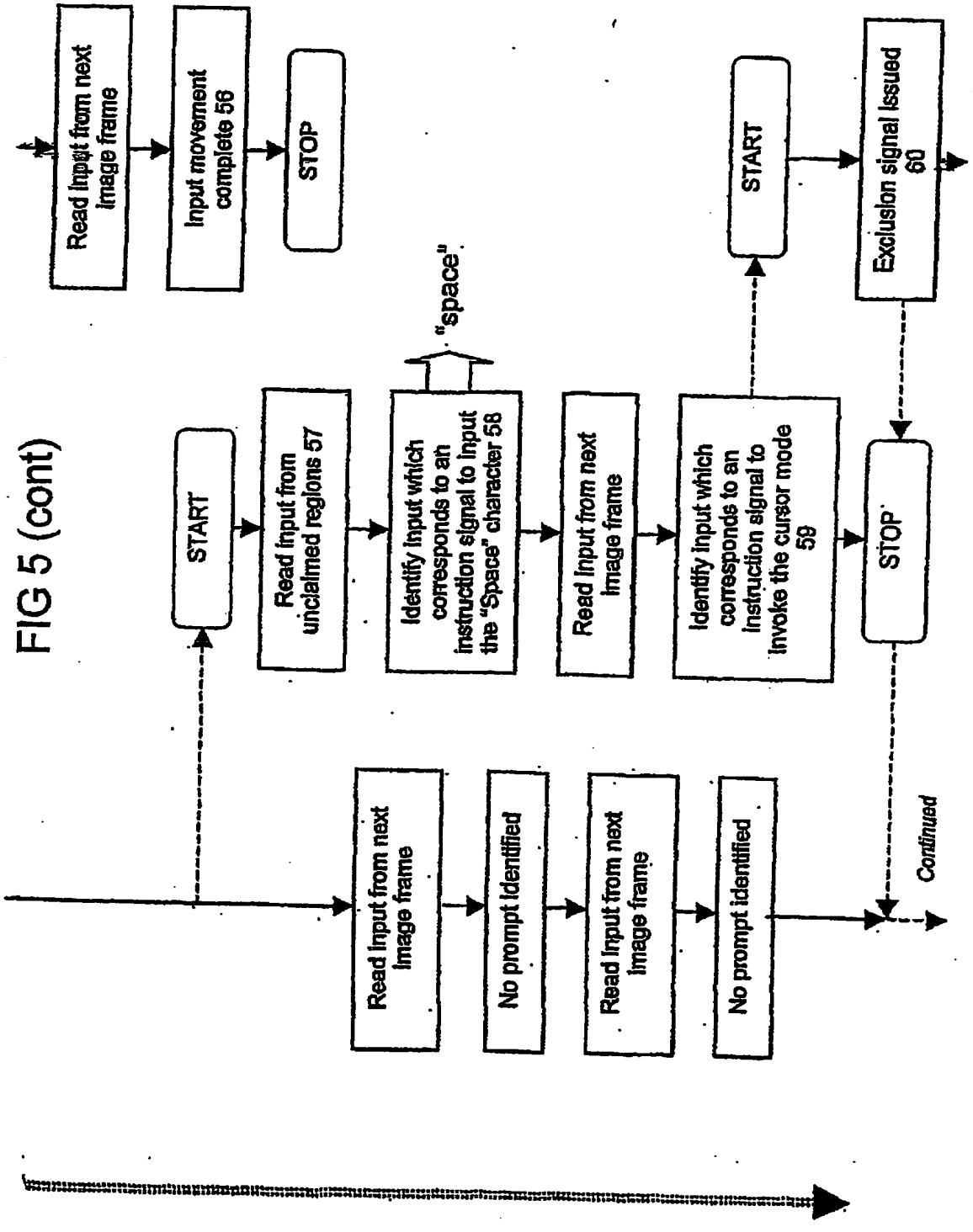

TIME 47
MAIN PROCESS 44
KEYBOARD SUB PROCESS 45
CURSOR SUB PROCESS 46
Initialization 48
START 49
Read input from unclaimed regions 50
Read input from claimed regions 51
Detect a prompt to invoke the cursor mode 53
Identify input which correspond to an instruction signal to input the character "A" 52
"A"
STOP
START
Exclusion signal issued 54
Read input from claimed regions
Detect input movement corresponding to an instruction signal to move the cursor 55
(x_1y_1) to (x_2y_2)

FIG 5

FIG 5 (cont)


Read input from next image frame
Input movement complete 56
STOP
START
Read input from unclaimed regions 57
Identify input which corresponds to an instruction signal to input the "Space" character 58
"space"
Read input from next image frame
Identify input which corresponds to an instruction signal to invoke the cursor mode 59
START
Exclusion signal issued 60
STOP
Read input from next image frame
No prompt identified
Read input from next image frame
No prompt identified
Continued

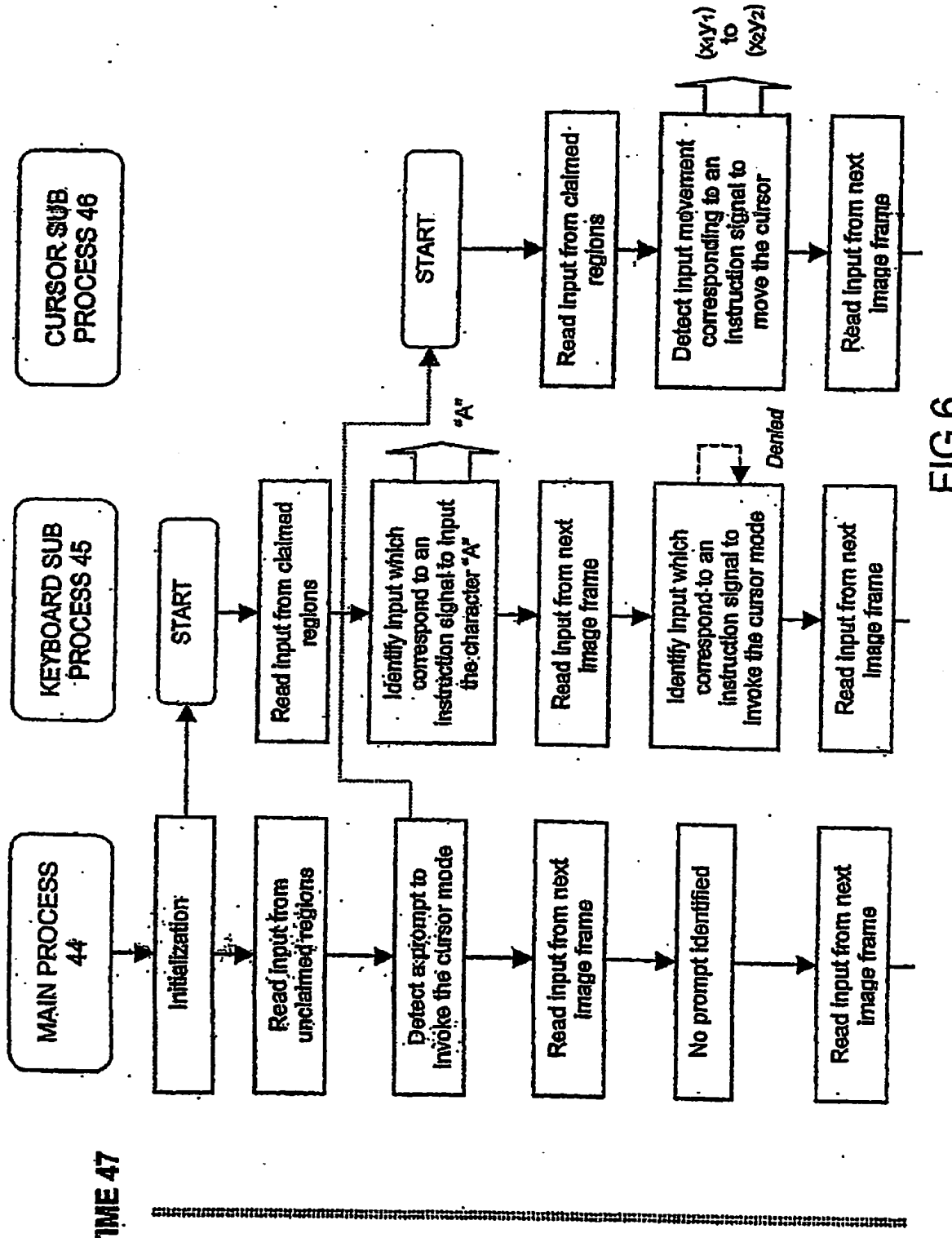
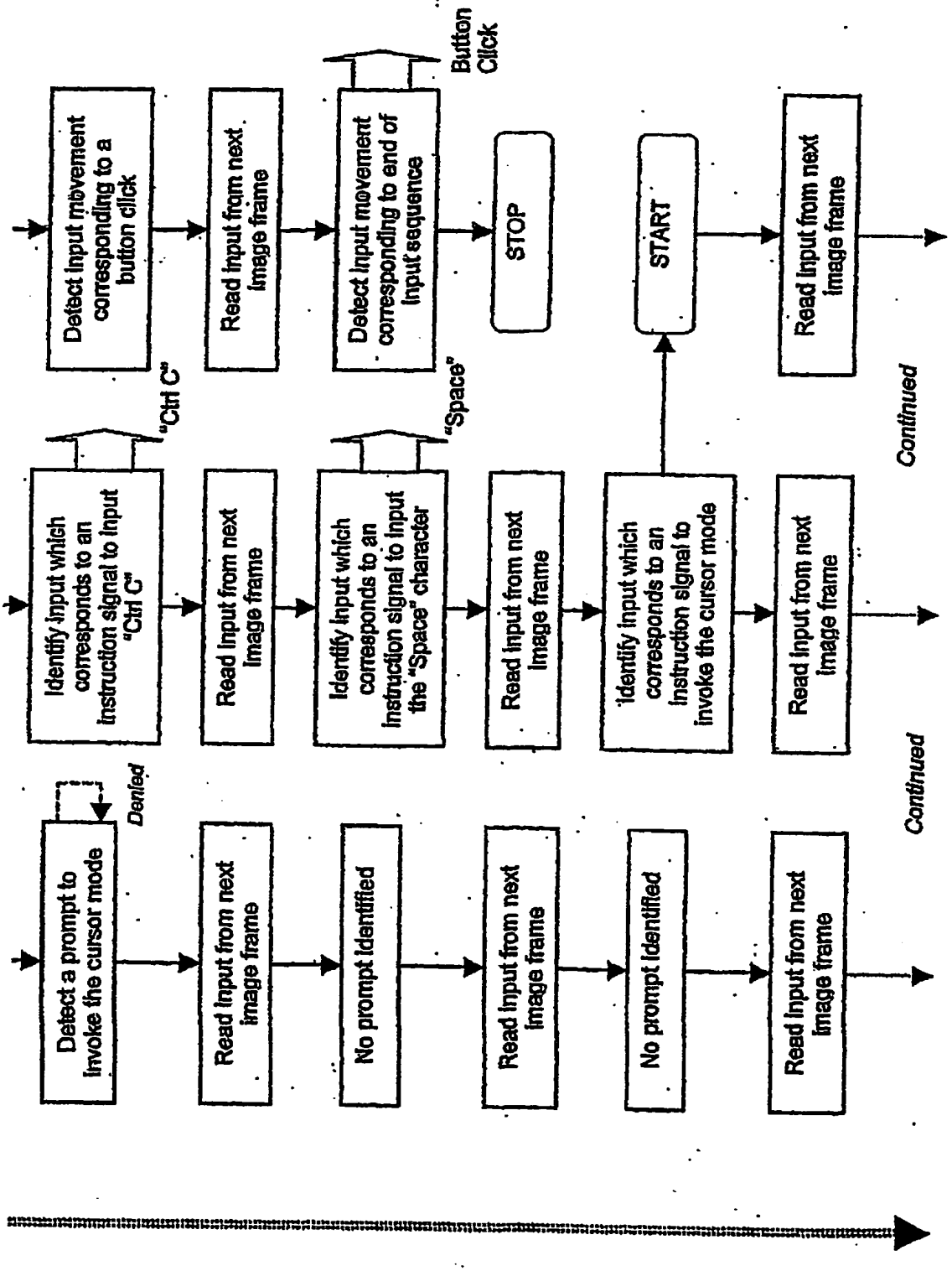

MAIN PROCESS 44
KEYBOARD SUB PROCESS 45
CURSOR SUB PROCESS 46
TIME 47
Initialization
START
START
Read input from unclaimed regions
Read input from claimed regions
Read input from claimed regions
Detect prompt to invoke the cursor mode
Identify input which correspond to an instruction signal to input the character "A"
"A"
Read input from next image frame
Read input from next image frame
Read input from next image frame
No prompt identified
Identify input which correspond to an instruction signal to invoke the cursor mode
Denied
Detect input movement corresponding to an instruction signal to move the cursor
(x1y1) to (x2y2)
Read input from next image frame
Read input from next image frame

FIG 6

FIG 6 (cont)


Detect a prompt to invoke the cursor mode
Denied
Read input from next image frame
No prompt identified
Read input from next image frame
No prompt identified
Read input from next image frame
Continued
Identify input which corresponds to an instruction signal to input "Ctrl C"
"Ctrl C"
Read input from next image frame
Identify input which corresponds to an instruction signal to input the "Space" character
"Space"
Read input from next image frame
identify input which corresponds to an instruction signal to invoke the cursor mode
Read input from next image frame
Continued
Detect input movement corresponding to a button click
Button Click
Read input from next image frame
Detect input movement corresponding to end of input sequence
STOP
START
Read input from next image frame

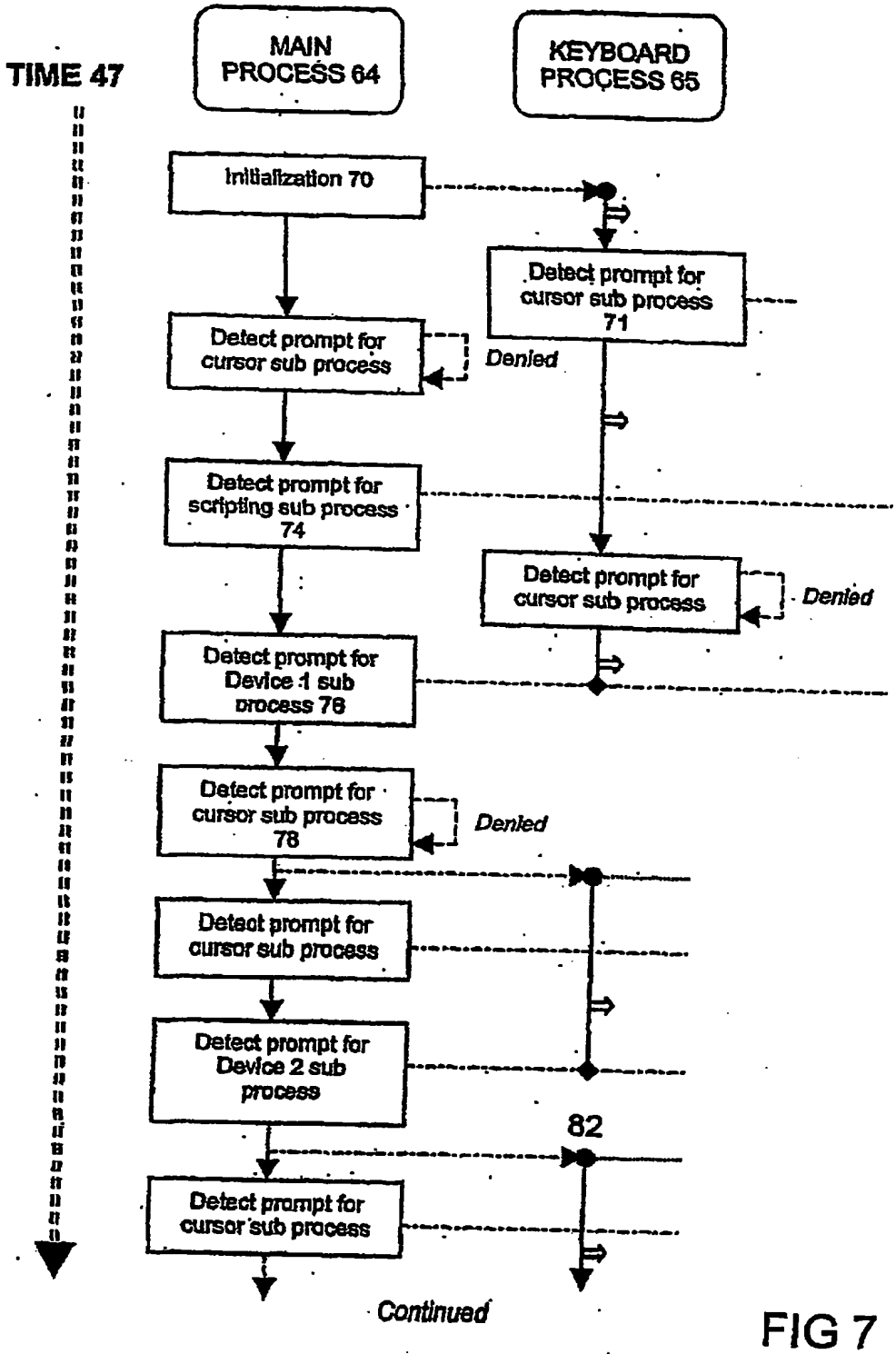
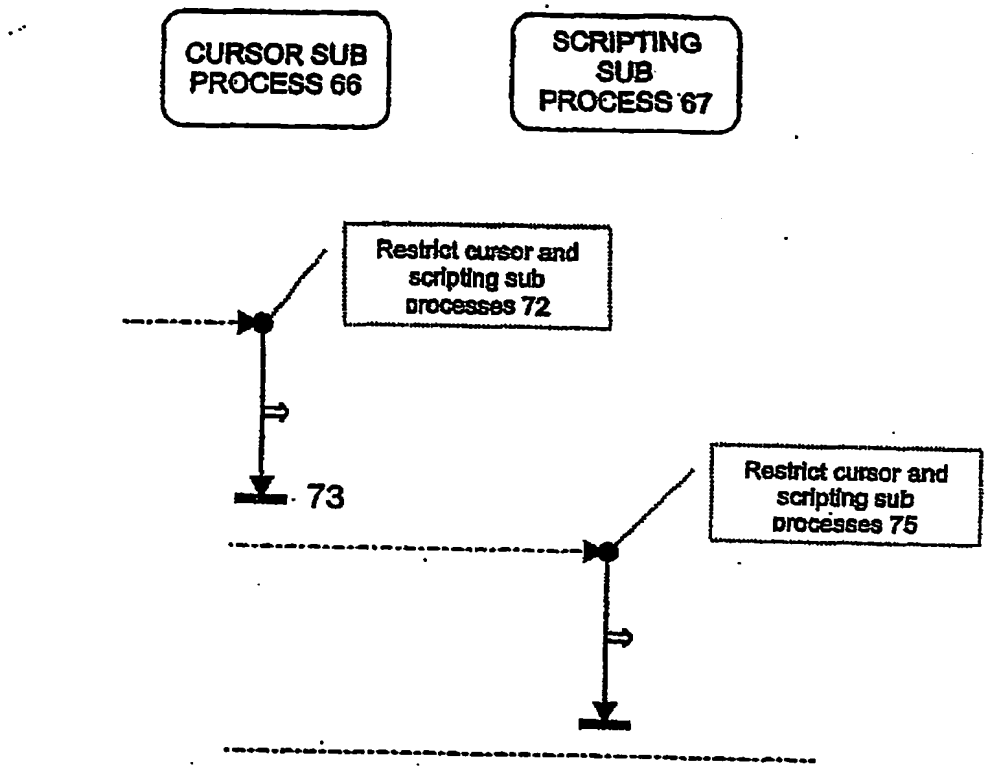

TIME 47
MAIN PROCESS 64
KEYBOARD PROCESS 65
Initialization 70
Detect prompt for cursor sub process 71
Detect prompt for cursor sub process
Denied
Detect prompt for scripting sub process 74
Detect prompt for cursor sub process
Denied
Detect prompt for Device 1 sub process 76
Detect prompt for cursor sub process 78
Denied
Detect prompt for cursor sub process
Detect prompt for Device 2 sub process
82
Detect prompt for cursor sub process
Continued

FIG 7


CURSOR SUB PROCESS 66
SCRIPTING SUB PROCESS 67
Restrict cursor and scripting sub processes 72
73
Restrict cursor and scripting sub processes 75

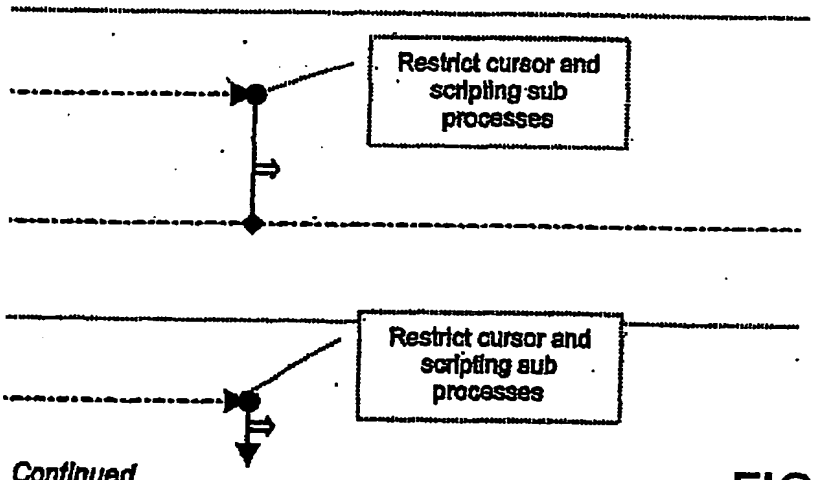

Restrict cursor and scripting sub processes
Restrict cursor and scripting sub processes
Continued

FIG 7 (cont i)

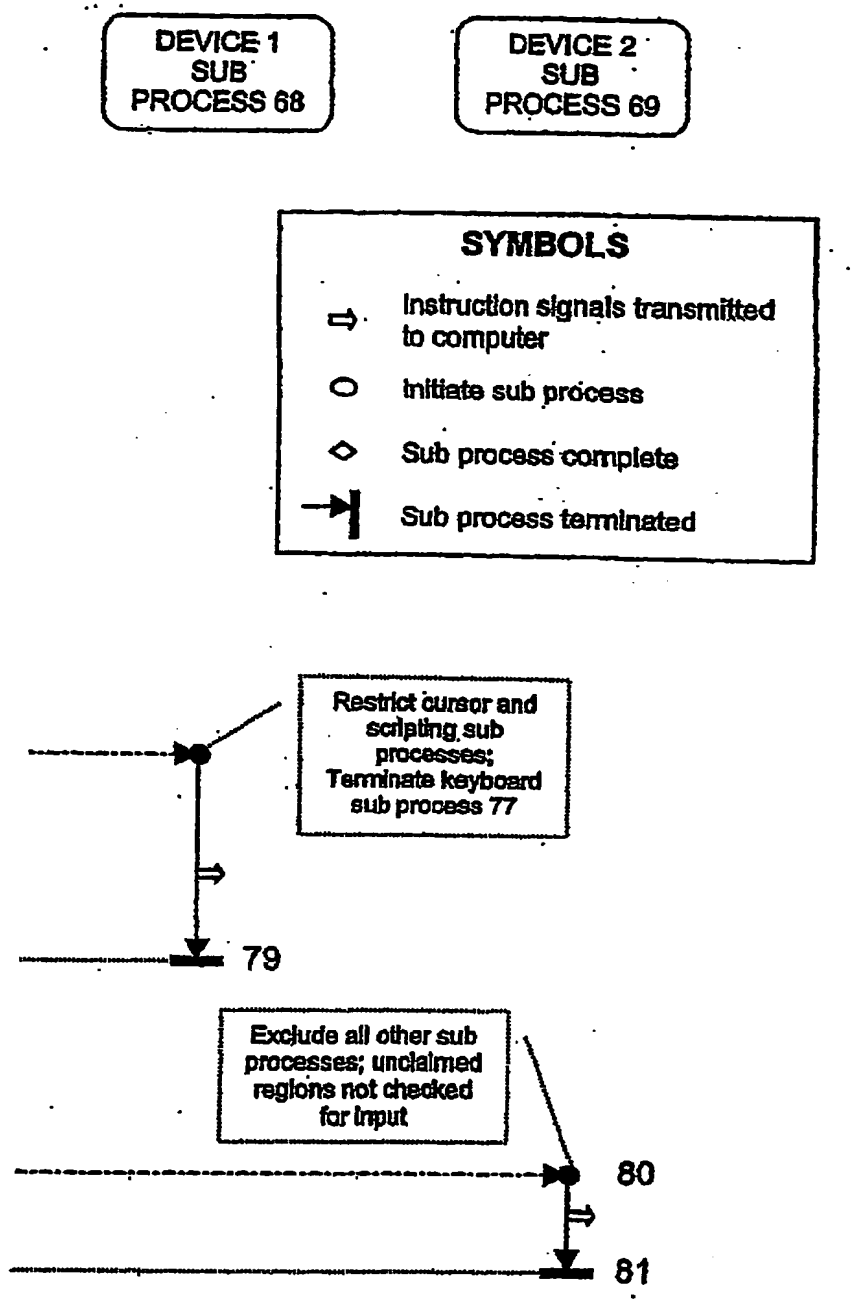

DEVICE 1 SUB PROCESS 68
DEVICE 2 SUB PROCESS 69
SYMBOLS
Instruction signals transmitted to computer
Initiate sub process
Sub process complete
Sub process terminated
Restrict cursor and scripting sub processes; Terminate keyboard sub process 77
79
Exclude all other sub processes; unclaimed regions not checked for input
80
81

FIG 7 (cont ii)

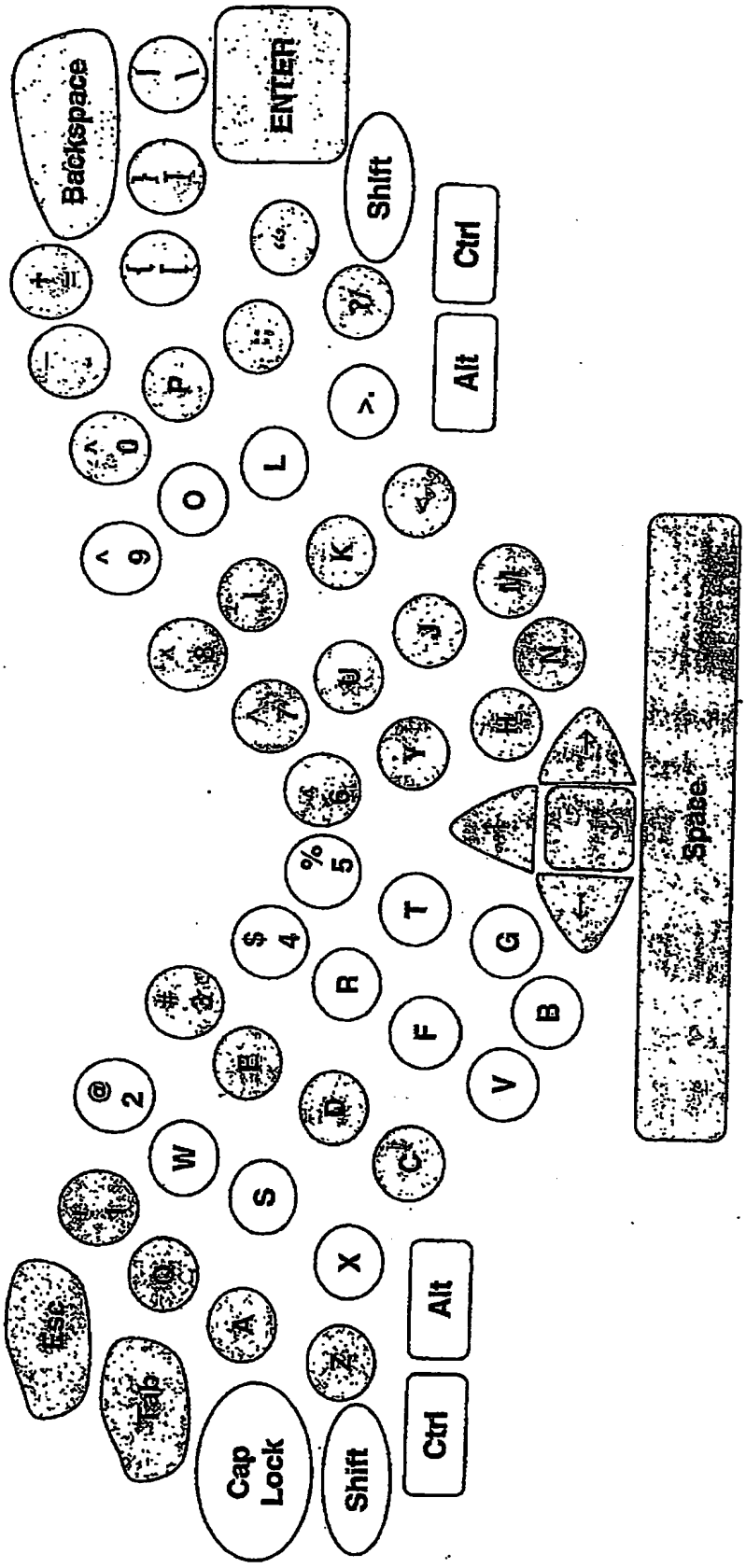

Backspace
ENTER
Shift
Ctrl
Alt
Alt
Ctrl
Shift
Cap Lock
Tab
Esc
Space

FIG 8

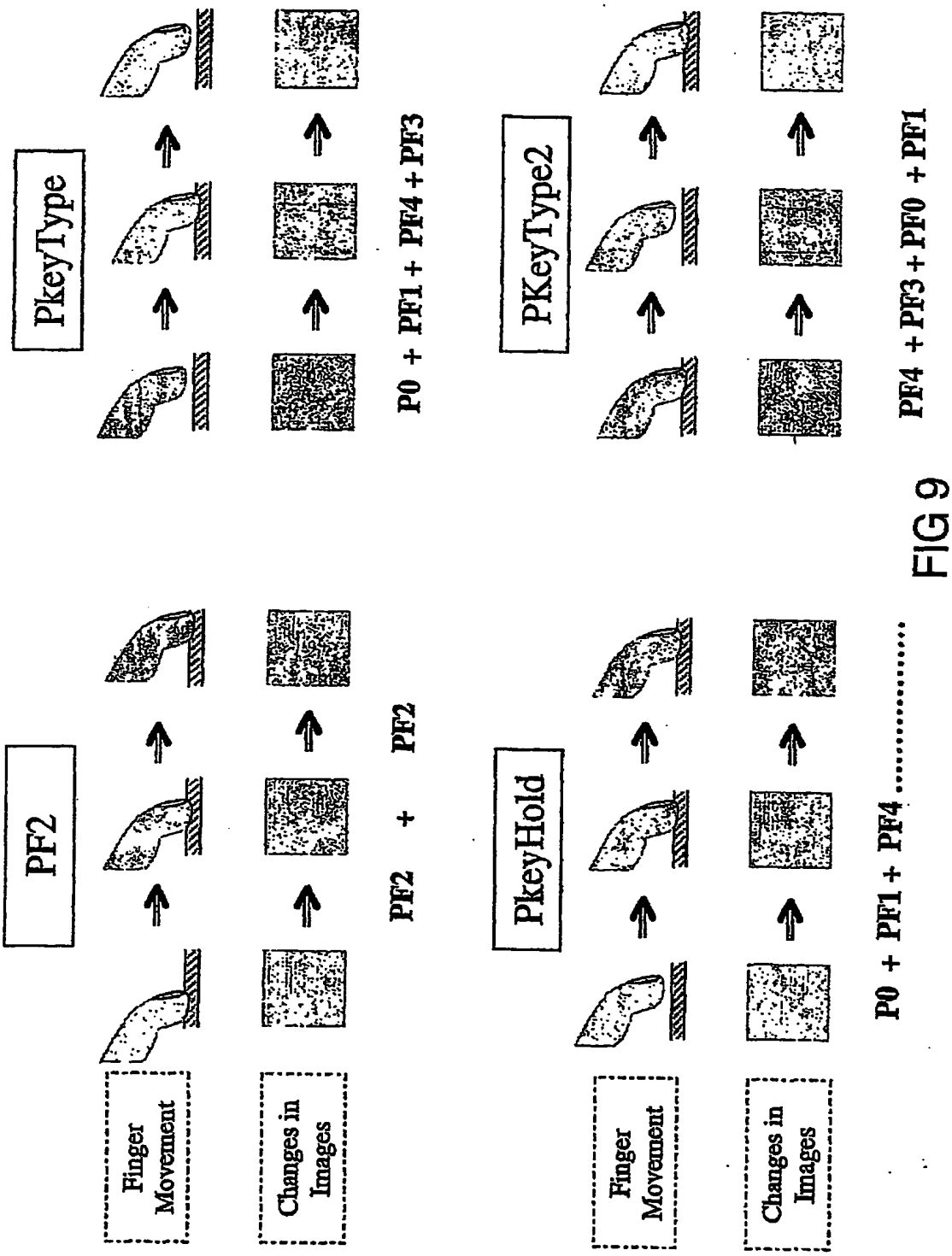
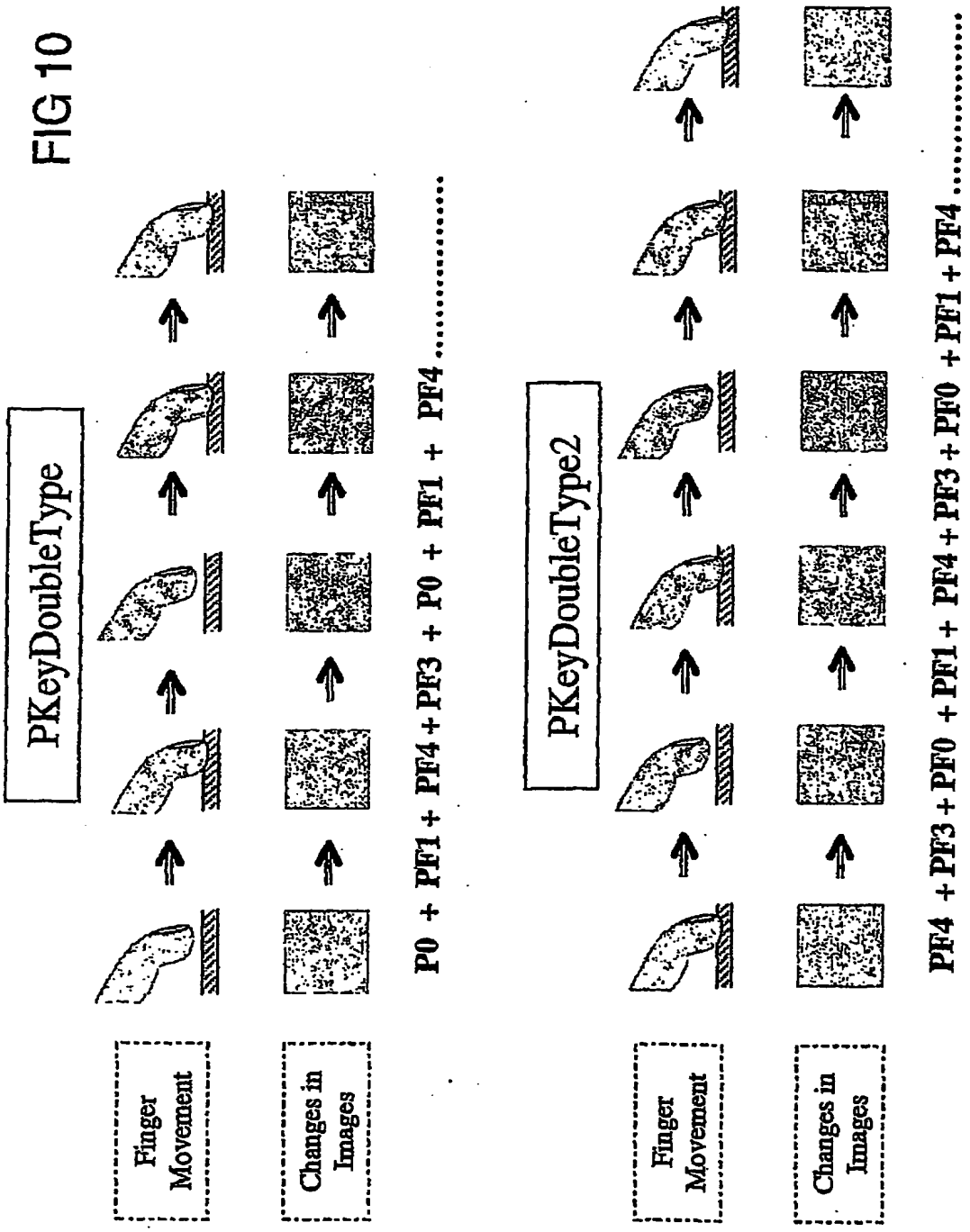

PKeyType
P0 + PF1 + PF4 + PF3
PKeyType2
PF4 + PF3 + PF0 + PF1
PF2
PF2 + PF2
PkeyHold
P0 + PF1 + PF4 .....
Finger Movement
Changes in Images
Finger Movement
Changes in Images

FIG 9

FIG 10


PKeyDoubleType
Finger Movement
Changes in Images
P0 + PF1 + PF4 + PF3 + P0 + PF1 + PF4 .....
PKeyDoubleType2
Finger Movement
Changes in Images
PF4 + PF3 + PF0 + PF1 + PF4 + PF3 + PF0 + PF1 + PF4 .....

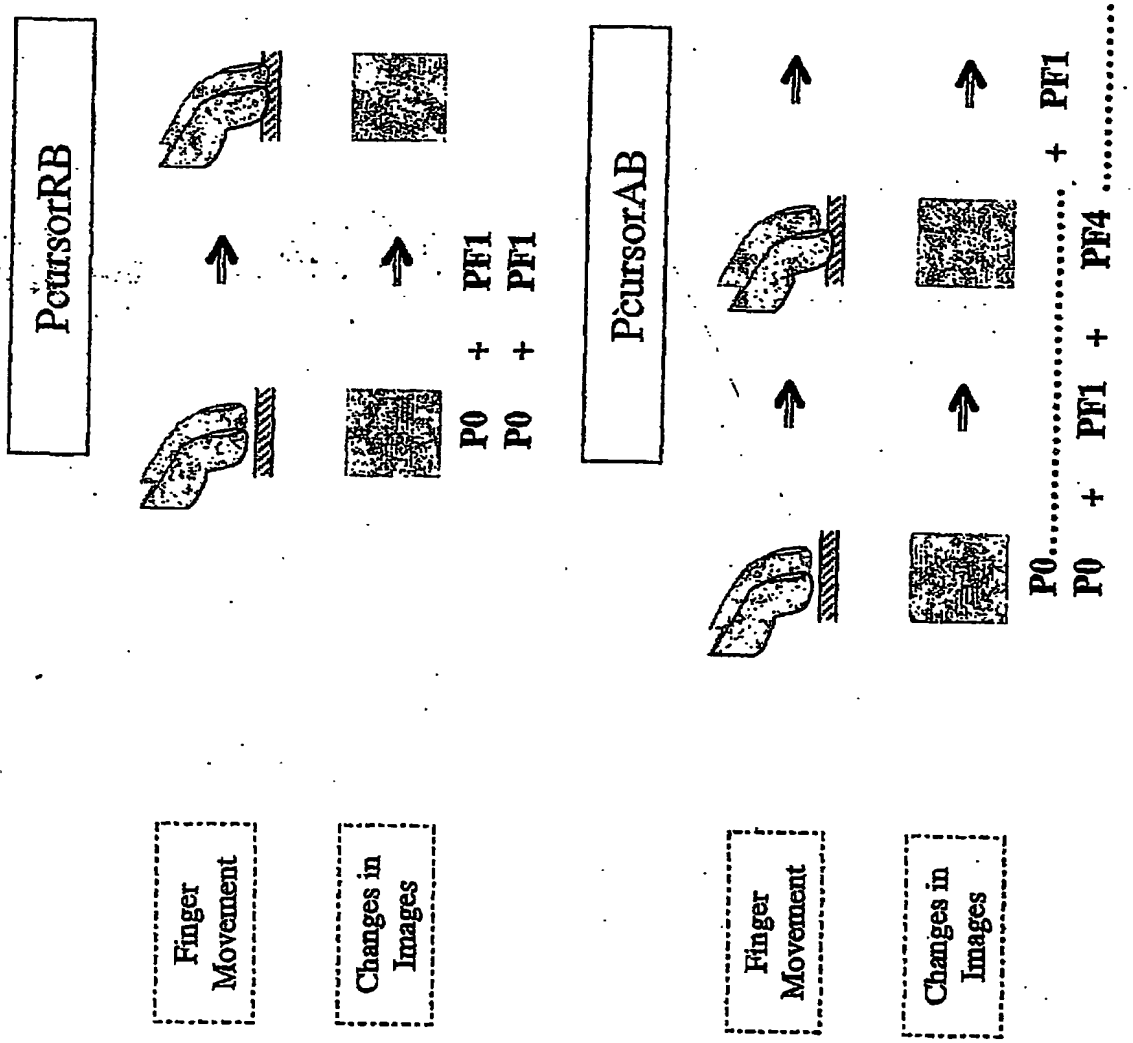

PcursorRB
PcursorAB
Finger Movement
Changes in Images
Finger Movement
Changes in Images
P0 + PF1
P0 + PF1
P0 + PF1 + PF4 + PF1
P0 + PF1 + PF4 + PF1

FIG 11